

What is claimed is:

1. A multiple compartment flexible bag assembly including a first predetermined volume of an aqueous sodium bicarbonate component solution contained in at least one of the multiple compartments and a second predetermined volume of an aqueous acid component solution contained in at least another of the multiple compartments, the component solutions being intended to be mixed together to obtain a peritoneal dialysis, hemodialysis or replacement fluid, characterized in that the aqueous acid component solution comprises an amount of dissolved carbon dioxide.
2. A multiple compartment flexible bag assembly according to claim 1, in which the concentration of carbon dioxide dissolved in the aqueous acid component solution is from 0.5 to 30 mmol/l.
3. A multiple compartment flexible bag assembly according to claim 2, in which the concentration of dissolved carbon dioxide is from 5 to 15 mmol/l.
4. A multiple compartment flexible bag assembly according to claim 1, in which the partial pressure value of carbon dioxide exhibited by said aqueous acid component solution substantially matches the partial pressure value of carbon dioxide exhibited by said aqueous sodium bicarbonate component solution.
5. A multiple compartment flexible bag assembly according to claim 1, in which said second predetermined volume of the aqueous acid component solution is intended for admixture with said first predetermined volume of the bicarbonate component solution in the preparation of a hemodialysis or substitution fluid and in which the formulation of said aqueous acid component solution comprises the following

electrolytes, glucose, acid and dissolved carbon dioxide at the limits or within the range of concentrations, pH and pCO₂ values as follows:

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|---------------------------|-----------|--------|
| Sodium | 0 to 4000 | mmol/l |
| Potassium | 0 to 1000 | mmol/l |
| Calcium | 0 to 50 | mmol/l |
| Magnesium | 0 to 30 | mmol/l |
| Chloride | 0 to 5500 | mmol/l |
| Glucose | 0 to 2000 | mmol/l |
| Acid | 0 to 100 | mmol/l |
| Dissolved CO ₂ | 0.5 to 30 | mmol/l |
| pH | 2 to 5 | |
| pCO ₂ | 10 to 675 | mmHg |

6. A multiple compartment flexible bag assembly according to claim 5, in which the concentration of dissolved carbon dioxide is from 5 to 15 mmol/l.

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7. A multiple compartment flexible bag assembly according to claim 1, in which said second predetermined volume of the aqueous acid component solution is intended for admixture with said first predetermined volume of the bicarbonate component solution in the preparation of a peritoneal dialysis fluid and in which the formulation of said aqueous acid component solution comprises the following electrolytes, glucose, acid and dissolved carbon dioxide at the limits or within the range of concentrations, pH and pCO₂ values as follows:

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| Sodium | 0 to 400 | mmol/l |
| Potassium | 0 to 5 | mmol/l |
| Calcium | 0 to 17.5 | mmol/l |

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|---------------------------|-----------|--------|
| Magnesium | 0 to 7.5 | mmol/l |
| Chloride | 0 to 500 | mmol/l |
| Glucose | 0 to 3000 | mmol/l |
| Acid | 0 to 100 | mmol/l |
| Dissolved CO ₂ | 0.5 to 30 | mmol/l |
| pH | 2 to 5 | |
| pCO ₂ | 10 to 760 | mmHg |
| Water | | |

8. A multiple compartment flexible bag assembly according to claim 7, in which the concentration of dissolved carbon dioxide is from 5 to 15 mmol/l.
- 5 9. A multiple compartment flexible bag assembly according to any one of the preceding claims, over-wrapped in a flexible gas-impermeable plastic material.
- 10 10. A process for preparing an aqueous acid component solution to be contained in at least one compartment of a multiple compartment flexible bag assembly of any one of the preceding claims, which comprises the steps of determining the carbon dioxide partial pressure value exhibited by an aqueous bicarbonate component solution, preparing the aqueous acid component solution, and introducing carbon dioxide into the prepared aqueous acid component solution to obtain an aqueous acid component solution which exhibits a carbon dioxide partial pressure value which substantially matches said carbon dioxide partial pressure value determined for said aqueous bicarbonate component solution.
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